

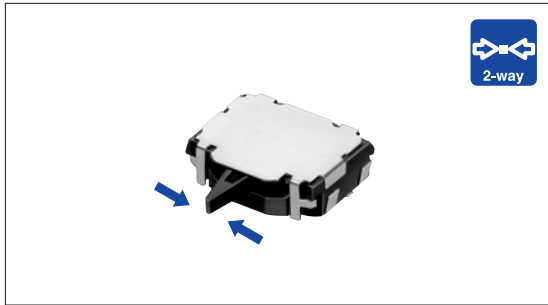
# Detector Switch

## Compact Two-way Detection Type

SSCM Series



Low-profile 1.5mm body with detection from both left/right directions.



### Features

- A small and thin 5×4×1.5mm size structure.
- Reflow solderable.
- Two-sided sliding-contact point structure for high-contact reliability

### Applications

- For detecting mechanisms in DVD players/recorders, digital still cameras and various electronic devices
- For mode switching and zoom operation in digital still cameras, digital camcorders, portable audio players and mobile phones

Detector

Push

Slide

Rotary

Encoders

Power

Dual-in-line  
Package Type

Multi Control  
Devices

TACT Switch™

Custom-  
Products

### Typical Specifications

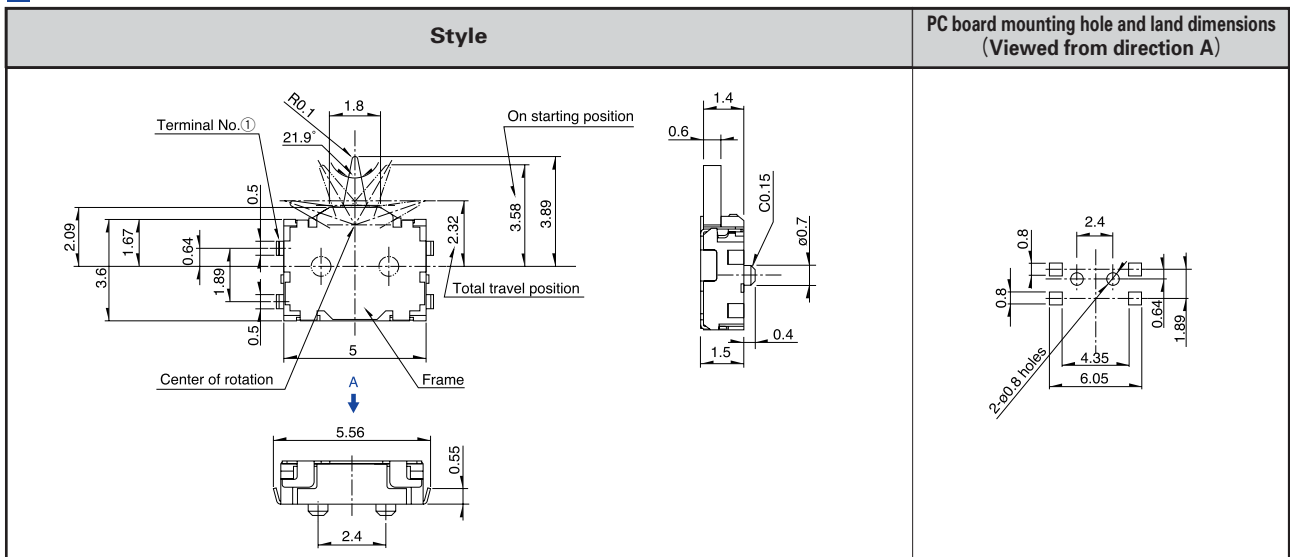
Items		Specifications
Rating (max.) / (min.) (Resistive load)		1mA 5V DC/50μA 3V DC
Contact resistance (Initial /After operating life)		2Ω max./5Ω max.
Operating force		0.35N max.
Operating life	Without load	50,000cycles
	With load	50,000cycles (1mA 5V DC)

### Product Line

Poles	Positions	Total travel (mm)	Terminal type	Location lug	Product No.
1	2	1.57	For PC board (Reflow)	With	SSCM110100
				Without	SSCM120100

### Dimensions

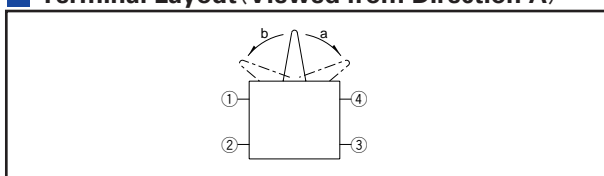
Unit:mm



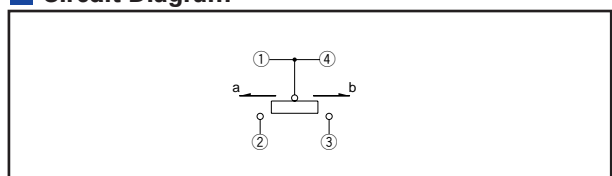
### Note

Above dimensions indicate "with location lug" version.

### Terminal Layout (Viewed from Direction A)



### Circuit Diagram



Refer to P.67 for product specifications.  
Refer to P.71 for taping package specifications.

# Product Specifications

Series		SPPB	SPVE	SPPW8	SPVM	SPVR	SPVF	SSCU	SSCT	SSCF	SSCM	
<b>Items</b>												
<b>Operating temperature range</b>		-40°C to +85°C	-10°C to +60°C		-40°C to +85°C		-10°C to +60°C	-40°C to +85°C			-10°C to +60°C	
<b>Rating (max.) (Resistive load)</b>		0.1A 30V DC			1mA 5V DC			0.1A 12V DC			1mA 5V DC	
<b>Electrical performance</b>	<b>Initial contact resistance</b>	1 Ω max.	500mΩ max.	1 Ω max.	2 Ω max.	3 Ω max.	500mΩ max.	70mΩ max.	20mΩ max.	100mΩ max.	2 Ω max.	
	<b>Insulation resistance</b>	100MΩ min. 100V DC						100MΩ min. 250V DC		100MΩ min. 100V DC		
	<b>Voltage proof</b>	100V A for 1minute						250V AC for 1minute		100V AC for 1minute		
<b>Mechanical performance</b>	<b>Terminal strength</b>	3N for 1minute	0.5N for 1minute	3N for 1minute	1N for 1minute	0.5N for 1minute	3N for 30 s	3N for 1minute		5N for 1minute	0.5N for 1minute	
	<b>Actuator strength</b>	10N	5N	10N	5N	2N	1N	5N	10N		0.5N	
	<b>Vibration</b>	10 to 55 to 10Hz/min., the amplitude is 1.5mm for all the frequencies, in the 3 direction of X, Y and Z for 2 hours respectively										
	Resistance to soldering heat	<b>Manual soldering</b>	300±5°C, 5s max.	350±5°C, 3s max.				300±10°C, 3 <sup>+1</sup> s	350±5°C, 3s max.	350±10°C, 3 <sup>+1</sup> s	350±5°C, 3s max.	
		<b>Dip soldering</b>	260±5°C, 5±1s		255±5°C, 5±1s			245±5°C, 5±1s		260±5°C, 5±1s		
<b>Reflow soldering</b>		Please see P.70						—————			Please see P.70	
<b>Durability</b>	<b>Operating life without load</b>	50,000 cycles 2 Ω max.	50,000 cycles 1 Ω max.	100,000 cycles 2 Ω max.	50,000 cycles 5 Ω max.		100,000 cycles 1 Ω max.	10,000 cycles 100mΩ max.	10,000 cycles 40mΩ max.	50,000 cycles 200mΩ max.	50,000 cycles 5 Ω max.	
	<b>Operating life with load</b>	(0.1A 30V DC) 50,000cycles 2 Ω max.	(0.1A 30V DC) 50,000cycles 1 Ω max.	(0.1A 30V DC) 100,000cycles 2 Ω max.	(1mA 5V DC) 50,000cycles 5 Ω max.		(1mA 5V DC) 100,000cycles 1 Ω max.	(0.1A 12V DC) 10,000cycles 150mΩ max.	(0.1A 12V DC) 10,000cycles 60mΩ max.	(0.1A 12V DC) 50,000cycles 300mΩ max.	(1mA 5V DC) 50,000cycles 5 Ω max.	
<b>Environmental performance</b>	<b>Cold</b>	-20±2°C for 96h					-40±2°C for 96h	-20±2°C for 96h				
	<b>Dry heat</b>	85±2°C for 96h										
	<b>Damp heat</b>	40±2°C, 90 to 95%RH for 96h										

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Multi Control Devices

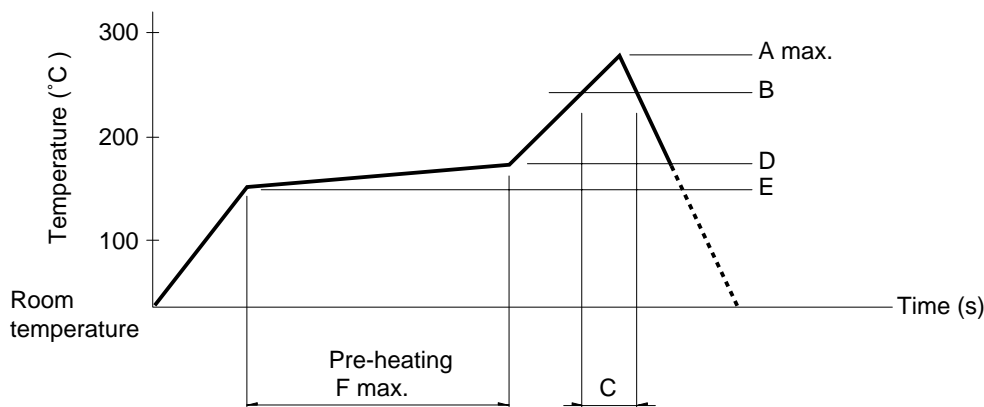
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## Soldering Conditions

### Example of Reflow Soldering Condition

1. Heating method: Double heating method with infrared heater.
2. Temperature measurement: Thermocouple 0.1 to 0.2  $\phi$  CA (K) or CC (T) at soldering portion (copper foil surface). A heat resisting tape should be used for fixed measurement.
3. Temperature profile



Series (Reflow type)	A (°C) 3s max.	B (°C)	C (s)	D (°C)	E (°C)	F (s)
SPPB	250	230	40			
SPPW8		200	20			
SPVE	260	230	40	180	150	120
SPVG						
SPVL						
SPVM						
SPVN						
SPVP						
SPVR						
SPVS						
SSCM						
SPPY5						

### Notes

1. The condition mentioned above is the temperature on the mounting surface of a PC board. There are cases where the PC board's temperature greatly differs from that of the switch, depending on the PC board's material, size, thickness, etc. The above-stated conditions shall also apply to switch surface temperatures.
2. Soldering conditions differ depending on reflow soldering machines. Prior verification of soldering condition is highly recommended.

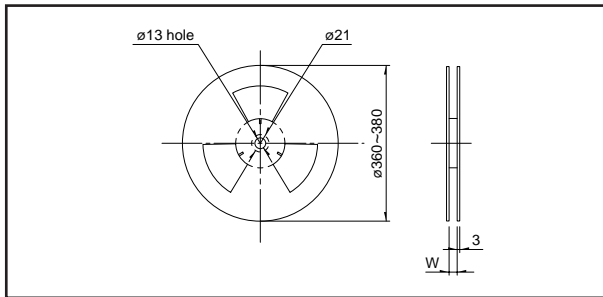
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# Taping Specifications

## Taping Packaging

Reel Size

Unit:mm



Series		Number of packages( pcs. )			Reel width W( mm )	Tape width ( mm )
		1 reel	1 case (shipment within Japan)	1 case (shipment outside of Japan)		
SPPB	53( Horizontal )	1,500	3,000	6,000	24.4	24
	53( Vertical )	600	1,200	2,400		
	63, 64	1,300	2,600	5,200		
SPPW81	h = 6.1( Reflow )	1,000	2,000	4,000	12.4	12
	h = 6.55( Reflow )					
	h = 7.6( Reflow )	850	1,700	3,400		
SPVE	Standard	h=3.8	2,800	5,600	16.4	16
		h=4.1				
		h=4.8	2,200	4,400		
		h=5.2	2,000	4,000		
		h=5.5				
	Low-profile	h=3.3	2,800	5,600		
SPVG		2,500	5,000	10,000	44.4	44
SPVL		5,000	10,000	20,000		
SPVM		3,000	6,000	12,000		
SPVN		5,000	10,000	20,000		
SPVP		4,500	9,000	18,000		
SPVR		2,500	5,000	10,000		
SPVS		5,000	10,000	20,000		
SSCM		3,000	6,000	12,000		
SPPY5		550	1,650	3,300		

### Note

Please place purchase orders for taping products per minimum package units (1 reel or 1 case).

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